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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of: **Toru SHIBUSAWA** Group Art Unit: **2614**

Serial Number: **10/043,155** Examiner: **Jean Wicel Désir**

Filed: **January 14, 2002** Confirmation No.: **5013**

For: **DIGITAL BROADCASTING RECEIVER AND CHANNEL INFORMATION REGISTRATION PROCESSING METHOD IN DIGITAL BROADCASTING RECEIVER**

Attorney Docket Number: **042287**
Customer Number: **38834**

SUBMISSION OF APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

October 31, 2005

Sir:

Applicants submit herewith an Appeal Brief in the above-identified U.S. patent application.

Attached please find a check in the amount of $500.00 to cover the cost for the Appeal Brief.

If any additional fees are due in connection with this submission, please charge our Deposit Account No. 50-2866.

Respectfully submitted,

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TEB/jl

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appeal No: **Unassigned**

In re application of:	**Toru Shibusawa**	Group Art Unit:	**2614**
Serial Number:	**10/043,155**	Examiner:	**Jean Wicel Désir**
Filed:	**January 14, 2002**	Confirmation No.:	**5013**

For: **DIGITAL BROADCASTING RECEIVER AND CHANNEL INFORMATION REGISTRATION PROCESSING METHOD IN DIGITAL BROADCASTING RECEIVER**

Customer Number: **38834** Attorney Docket No.: **042287**

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 31, 2005

Sir:

Applicant appeals the February 28, 2005 rejection of claims 1-10.

Following the Notice of Appeal filed on August 29, 2005, the following is the Applicant's (now referred to hereinbelow as "appellant") Appeal Brief.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the subject application, which is:

SANYO Electric Co. Ltd.

5-5, Keihan-Hondori, 2-chome
Moriguchi-shi, Osaka
Japan

II. RELATED APPEALS AND INTERFERENCES

Appellant knows of no other appeals or interference proceedings related to the present appeal.

III. STATUS OF CLAIMS

Pending claims 1-10 stand rejected. No claims are allowed or objected to. The claims on appeal are claims 1-10.

IV. STATUS OF AMENDMENTS

No Amendments have been filed in this application. The list of claims in the Claim Appendix includes original claims 1-10.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present claimed invention is directed to a digital broadcasting receiver and a channel information registration processing method in a digital broadcasting receiver.

With respect to claim 1, in a digital broadcasting receiver (see, *e.g.*, the digital broadcasting receiver in Fig. 1) comprising:

first means (see, *e.g.*, CPU 21, antenna 1, initial stage amplifier 3, AGC amplifier 4, down converter 5, voltage controlled oscillator 6, PLL circuit 7, D/A converter 8, amplifier 9, band pass filter 10, amplifier 17, detection circuit 18, comparator 19, D/A converter 20 and memory 22 in Fig. 1) for performing pre-scan processing (see, *e.g.*, page 8, line 22 – page 11,

line 4; and steps 1-9 in Fig. 7) for successively tuning in on channels previously set (see, *e.g.*, page 9, lines 7-9 and page 10, lines 16-20; steps 4, 7 and 8 in Fig. 7), to examine whether or not a received signal on each of the channels is of a predetermined quality or more (see, *e.g.*, page 9, line 20 – page 10, line 6; step 5 in Fig. 7), and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates (see, *e.g.*, page 10, lines 7-11; waveform of receivable channel candidates in Fig. 4; and step 6 in Fig. 7); and

second means (see, *e.g.*, CPU 21, antenna 1, initial stage amplifier 3, AGC amplifier 4, down converter 5, voltage controlled oscillator 6, PLL circuit 7, D/A converter 8, amplifier 9, band pass filter 10, amplifier 11, A/D converter 12, demodulation/FEC circuit 13, memory 22, SI decoder 25 in Fig. 1) for performing normal scan processing (see, *e.g.*, page 11, line 5 – page 13, line 13; locking signal (d), analog broadcast wave flag (c) in Fig. 1; and steps 10-20 in Fig. 7) for successively tuning in on the receivable channel candidates temporarily registered in the storage device (see, *e.g.*, page 11 lines 10-18 and page 12, line 25 – page 13, line 7; waveform of receivable channel candidates in Fig. 4; and steps 10, 11, 18 and 19 in Fig. 7) by the first means, to acquire and register necessary channel information (see, *e.g.*, page 12, lines 9-18; and steps 12, 13, 15, 16 and 17 in Fig. 7).

With regard to claim 6, a channel information registration processing method in a digital broadcasting receiver (see, *e.g.*, the digital broadcasting receiver in Fig. 1) comprising:

a first step of performing pre-scan processing (see, *e.g.*, page 8, line 22 – page 11, line 4; and steps 1-9 in Fig. 7) for successively tuning in on channels previously set (see, *e.g.*, page 9,

lines 7-9 and page 10, lines 16-20; steps 4, 7 and 8 in Fig. 7), to examine whether or not a received signal on each of the channels is of a predetermined quality or more (see, *e.g.*, page 9, line 20 – page 10, line 6; step 5 in Fig. 7), and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates (see, *e.g.*, page 10, lines 7-11; waveform of receivable channel candidates in Fig. 4; and step 6 in Fig. 7); and

a second step of performing normal scan processing (see, *e.g.*, page 11, line 5 – page 13, line 13; locking signal (d), analog broadcast wave flag (c) in Fig. 1; and steps 10-20 in Fig. 7) for successively tuning in on the receivable channel candidates temporarily registered in the storage device (see, *e.g.*, page 11 lines 10-18 and page 12, line 25 – page 13, line 7; waveform of receivable channel candidates in Fig. 4; and steps 10, 11, 18 and 19 in Fig. 7) in the first step, to acquire and register necessary channel information (see, *e.g.*, page 12, lines 9-18; and steps 12, 13, 15, 16 and 17 in Fig. 7).

For example, a pre-scan processing is performed as shown in steps 1-9 of Fig. 7, for successively tuning in on channels 14-83 previously set. In order to tune in on a set channel, channel selection data is fed from the CPU 21 to the PLL circuit 7 (step 4 of Fig 7). A radio wave received in the antenna 1 is processed in the tuner 2. An output signal of the tuner 2 is fed to the band pass filter 10 through the amplifier 9. An Intermediate frequency (IF) signal on a desired channel tuned in on is outputted from the band pass filter 10. The IF signal is amplified by the amplifier 17, and is then fed to the comparator 19 through the detection circuit 18. In the comparator 19, an output voltage of the detection circuit 18 and the reference voltage outputted

from the D/A converter 20 are compared with each other (see Fig. 3) in order to judge whether or not the channel tuned in on is receivable.

The CPU 21 judges whether or not the channel tuned in on is receivable on the basis of the output of the comparator 19 (step 5 of Fig. 7). The CPU 21 writes, when it judges that the channel tuned in on is receivable, the channel number of the channel into the memory 22 as a receivable channel candidate (see the receivable channel candidates in Fig. 4 and step 6 in Fig. 7).

Then, for example, after each channel 14-83 is pre-scanned in steps 1-9 of Fig. 7, a normal scan processing is performed, as shown in steps 10-19 of Fig. 7, for successively tuning in on the receivable channel candidates temporarily registered in the storage device to acquire and register necessary channel information.

That is, for example, the CPU 21 reads out one of the channel numbers of the receivable channel candidates which have been stored in the memory 22 by the pre-scan processing and feeds the data to the PLL circuit 7 in order to tune in on the channel. When the channel is tuned in on, an IF signal corresponding to the channel tuned in on is outputted from the tuner 2 and is converted into digital data by the A/D converter 12. The digital data is then fed to the demodulation/FEC circuit 13, where it is subjected to demodulation and error correction.

When the digital broadcast wave is normally received, the locking signal (d) is outputted from the demodulation/FEC circuit 13. When the analog broadcast wave is normally received, an analog broadcast wave flag (c) is outputted from the demodulation/FEC circuit 13.

The CPU 21 decodes, when it receives the locking signal (d) from the demodulation/FEC circuit 13 (YES in step 12), service information from demodulation data by the SI decoder 25 (step 15), and registers in the memory 22 the decoded service information as service information corresponding to the channel tuned in on (step 16).

The CPU 21 registers, when it receives the analog broadcast wave flag (c) from the demodulation/FEC circuit 13 (YES in step 13), the fact that the channel tuned in on is a channel in analog broadcasting is registered in the memory 22 (step 17).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-10 are anticipated by EPO 0 834 991 A1 (hereinafter being referred to as "EPO '991").

VII. ARGUMENTS

Claims 1-10 were rejected under 35 U.S.C. §102 (b) as being anticipated by EPO '991.

Independent claim 1 calls for *first means for performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and second means for performing normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device by the first means, to acquire and register necessary channel information.*

Similarly, independent claim 6 calls for *a first step of performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and a second step of performing normal scan processing for successively tuning in on the receivable channel candidates*

temporarily registered in the storage device in the first step, to acquire and register necessary channel information.

According to EPO '991, microprocessor 6 scans the frequency range in first frequency steps, measures the RF level at each frequency step, compares the measured RF value with a threshold, and when the threshold value is breached, scans a frequency area in smaller second frequency steps to determined the edges frequencies of the channel and the central frequency of the channel from the edge each frequencies.

That is, since EPO '991 performs the second frequency (steps) scan for a channel right after the first frequency (steps) scan, there is absolute no need in EPO '991 to temporarily register the channel numbers of the channels for which the measured RF value exceed a threshold value determined in the first frequency (steps) scan.

With regard to Appellant's argument that EPO '991 fails to disclose or fairly suggest the claimed feature of temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates after performing a pre-scan processing and then performing a normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device to acquire and register necessary channel information, the Examiner takes the following position:

> EPO ' 991 does not perform the second frequency (steps) scan for a channel right after the first frequency (steps) scan as argued by the Applicant, because EPO '991 includes a memory 7 as shown in the Figure for temporarily storing tuning information for the different channels, and these tuning information are considered as also included the channels numbers of the channels as claimed. 1

However, the Examiner is clearly mis-characterizing the teachings of EPO '991.

More specifically, in column 3, lines 14-29, EPO '991 discloses that the microprocessor 6 starts scanning the frequency range in first frequency steps corresponding with just less than half the minimum symbol rate of the channels that can be expected. Then, during the scanning in the first frequency steps, if the measured RF value is higher than a predetermined threshold value, the approximate position of the center frequency of a channel is found.

However, at this point, EPO '991 does not temporarily store the found approximate position of the center frequency of a channel in the memory 7, as asserted by the Examiner. Instead, EPO '991 clearly discloses that after the approximate position of the centre frequency of a channel is found, "[t]hen the microprocessor 6 switches to scanning the frequency area around the assumed centre frequency in second frequency steps suitable for finding tuning, i.e., steps much smaller than the first frequency steps."2

In using the smaller second frequency steps, the microprocessor 6 is able to determine the frequencies at both edges of the channel, estimate the centre frequency based on the average of

1 Please see, lines 13-17, page 3 of the Final Action dated February 28, 2005.
2 Please see, lines 30-34, col. 3 of EPO '991.

the edges, estimate the symbol rate from the bandwidth of the channel, and control the demodulator 5 to lock on the channel found. See lines 30-51, col. 3 of EPO '991.

Only after the demodulator 5 provides an indication to the microprocessor 6 that it has locked on the channel found, the corresponding information can be stored in the memory for future use. See lines 51-54, col. 3 of EPO '991.

That is, EPO '991 does not temporarily store the found approximate position of the center frequency of a channel in the memory 7 after the microprocessor 6 performs the first frequency scan in first frequency steps, and instead only after the microprocessor 6 performs the second frequency scan in smaller steps can the center frequency of the channel be estimated and then subsequently stored. In other words, the Examiner has failed to appreciate that while EPO '991 does eventually store the channel information, it is done only after the second frequency scan is performed.

It is well settled that:

> "A claim is anticipated only if each and every element *as set forth in the claim* is found, either expressly or inherently described, in a single prior art reference." *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1567, 7 USPQ2d 1057 (Fed. Cir. 1988)."

Accordingly, it is respectfully submitted that EPO '991 fails to anticipate claims 1 and 6, since EPO '991 fails to disclose, describe or fairly suggest each and every element set forth in claims 1 and 6.

More specifically, EPO '991 fails to disclose the features of claim 1 concerning *first means for performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and second means for performing normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device by the first means, to acquire and register necessary channel information.*

Similarly, EPO '991 fails to disclose the features of claim 6 concerning *a first step of performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and a second step of performing normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device in the first step, to acquire and register necessary channel information.*

VIII. CONCLUSION

For the above reasons, appellant requests that the Board of Patent Appeals and Interferences reverse the Examiner's rejection of claims 1-10.

In the event this paper is not timely filed, appellant hereby petitions for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 50-2866, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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TEB/jl
Enclosures: Claims appendix
Evidence appendix
Related proceedings appendix

CLAIMS APPENDIX

Claim 1 (Original): A digital broadcasting receiver comprising:

first means for performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and

second means for performing normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device by the first means, to acquire and register necessary channel information.

Claim 2 (Original): The digital broadcasting receiver according to claim 1, wherein the pre-scan processing is performed a plurality of number of times in the first means.

Claim 3 (Original): The digital broadcasting receiver according to claim 1, wherein the pre-scan processing is performed in a state where the gain of an automatic gain control amplifier in a tuner is fixed.

Claim 4 (Original): The digital broadcasting receiver according to claim 1, wherein it is judged in the first means whether or not the received signal is of the predetermined quality or more on the basis of judgment whether or not received power is more than a predetermined value.

Claim 5 (Original): The digital broadcasting receiver according to claim 1, wherein the channel information include a receivable channel number, service information in the case of a channel in digital broadcasting, and a distinction between the channel in digital broadcasting and a channel in analog broadcasting.

Claim 6 (Original): A channel information registration processing method in a digital broadcasting receiver comprising:

a first step of performing pre-scan processing for successively tuning in on channels previously set, to examine whether or not a received signal on each of the channels is of a predetermined quality or more, and temporarily registering the channel numbers of the channels on which the received signals are of the predetermined quality or more in a storage device as receivable channel candidates; and

a second step of performing normal scan processing for successively tuning in on the receivable channel candidates temporarily registered in the storage device in the first step, to acquire and register necessary channel information.

Claim 7 (Original): The channel information registration processing method in the digital broadcasting receiver according to claim 6, wherein the pre-scan processing is performed a plurality of number of times in the first step.

Claim 8 (Original): The channel information registration processing method in the digital broadcasting receiver according to claim 6, wherein the pre-scan processing in the first step is

performed in a state where the gain of an automatic gain control amplifier in a tuner is fixed.

Claim 9 (Original): The channel information registration processing method in the digital broadcasting receiver according to claim 6, wherein it is judged in the first step whether or not the received signal is of the predetermined quality or more on the basis of judgment whether or not received power is more than a predetermined value.

Claim 10 (Original): The channel information registration processing method in the digital broadcasting receiver according to claim 6, wherein the channel information include a receivable channel number, service information in the case of a channel in digital broadcasting, and a distinction between the channel in digital broadcasting and a channel in analog broadcasting.

EVIDENCE APPENDIX

No evidence under 37 C.F.R. § 41.37(c)(1)(ix) is submitted.

RELATED PROCEEDING APPENDIX

No decisions under 37 C.F.R. § 41.37(c)(1)(x) are rendered.